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SUMMARY OF CONFERENCE. POLLUTION OF
INTERSTATE WATERS OF BIG BLUE RIVER
NEBRASKA - KANSAS

Public Health Service
Washington, D.C.

May 1957

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Summary of Conference

Pollution of Interstate Waters of Big Blue River

- Nebraska - Kansas

(May 1957)

Summary of Conference

POLLUTION OF INTERSTATE WATERS OF BIG BLUE RIVER (NEBRASKA-KANSAS)

The Big Blue River is one of the major streams of the Kansas River Basin. It rises in southeast Nebraska and flows southeasterly to form a junction with the Little Blue River below Waterville, Kansas.

On the basis of reports, surveys and studies the Surgeon General, having reason to believe that pollution of the Big Blue River caused by discharges of untreated and inadequately treated sewage by municipalities in Nebraska is endangering the health and welfare of persons in Kansas, a State other than that in which the discharges originate, called a conference on the matter of pollution of interstate waters of the Big Blue River (Nebraska-Kansas). The conference was held on May 3, 1957, at 10:00 a.m. in the Council Chamber, Municipal Auditorium, 4th and Ella Streets, Beatrice, Nebraska.

The following conferees representing the State water pollution control agencies of Nebraska and Kansas and the Public Health Service attended the conference:

Leonard B. Dworsky

U. S. Public Health Service
Kansas City, Missouri

Sidney Edelman

Office of the General Counsel
U. S. Dept. of Health, Education
and Welfare

T. A. Filipi

Nebraska State Department of Health

Carl F. Hodgkinson

Kansas State Board of Health

Glen J. Hopkins

U. S. Public Health Service
Kansas City, Missouri

Dwight F. Metzler

Kansas State Board of Health

Murray Stein, Chairman

Public Health Service
Washington, D. C.

Also participating in the conference were the following representatives of the City of Beatrice, Nebraska, who were invited by the Nebraska State Department of Health through the Mayor of the City of Beatrice:

Anne Carstens	City Attorney Beatrice, Nebraska
Allen Davison	Mayor Beatrice, Nebraska
George R. Miller	General Manager Board of Public Works Beatrice, Nebraska
R. L. Reins	Henningson, Durham, & Richardson, Inc. Consulting Engineers Omaha, Nebraska
W. E. Weigel	Citizen, Beatrice, Nebraska

The Chairman of the Conference pointed out that:

1. Under the Federal Water Pollution Control Act (P.L. 650, 84th Congress) pollution of interstate waters which endangers the health or welfare of persons in a State other than the one in which the discharge originates is subject to abatement.
2. The first step of this procedure is the calling of a conference.
3. The purpose of the conference is to bring the States and Public Health Service together to lay a basis for future action by all parties concerned and to give the States and localities an opportunity to take any remedial action which may be indicated, under State and local law.

Mr. Glen J. Hopkins, Regional Engineer, Public Health Service, Region VI, read a general statement on pollution of the interstate waters of the Big Blue River (See Exhibit FC-1 attached).

Mr. T. A. Filipi, Director, Division of Sanitation, Nebraska State Department of Health, Lincoln, Nebraska, read a statement covering activities of Nebraska communities relating to the construction of a proposed sewage treatment facility (See Exhibit NC-1 attached).

Mr. Dwight F. Metzler, Chief Engineer and Director, Division of Sanitation, Kansas State Board of Health, read a statement on the effects of interstate pollution of the Big Blue River on present and potential water uses in Kansas (See Exhibit KC-1 attached).

Allen Davison, Mayor of the City of Beatrice, announced to the conference that his city had entered into a contract with the engineering firm of Henningson, Durham, and Richardson, consulting engineers, Omaha, Nebraska, for the preparation of detailed plans and specifications for municipal treatment works. This agreement was entered into on May 2, 1957, the day before the conference.

In the light of conference discussions, the conferees unanimously made the following conclusions and recommendations:

1. That pollution of interstate waters subject to abatement under the Federal Water Pollution Control Act is occurring in the Big Blue River (Nebraska-Kansas). Sewage and other discharges from municipalities in Nebraska are finding their way into the waters of the Big Blue River, an interstate water as defined by the Federal Act. Such discharges cause pollution of the Big Blue River so as to endanger the health and welfare of persons in Kansas, a State other than that in which the discharges originate. The effects of this pollution are contamination of the source of municipal water supply of Marysville, Kansas, and interference with the use of the Big Blue River in Kansas for industrial water supply,

irrigation, stock watering and fishing. Such pollution may interfere with the full utilization of the waters of Tuttle Creek Reservoir, a large impoundment, which is now being constructed on the Big Blue River in Kansas below Mar,sville. Among other things, the waters of the Tuttle Creek Reservoir will be used for irrigation and recreational purposes.

2. That the major cause of the pollution of the Big Blue River is the discharge of untreated sewage from Beatrice, Nebraska. However, other communities in Nebraska, such as Stromsburg, Ulysses, Seward, Milford, and Wilber, discharge untreated sewage to the Big Blue River and the cities of Hastings, Fairmont, Friend, and Crete in Nebraska discharge inadequately treated sewage into the river. Residual pollution from these sources also contributes to the pollution of interstate waters of the Big Blue River.

3. That the measures presently used for the disposal of sewage from the above named municipalities in Nebraska are not adequate to secure abatement of pollution of the interstate waters of the Big Blue River.

4. That the delays encountered in abatement of such pollution are due to the limited State water pollution control program now in effect in Nebraska and the consequent delay by Nebraska communities in building adequate sewage treatment works.

5. That the City of Beatrice should submit a status report on progress toward construction of an adequate waste treatment plant for that city to the Nebraska State Department of Health by December 1, 1957.

6. That the City of Beatrice should award a contract for construction of such treatment works as soon as possible after the engineering plans and specifications have been completed, but in no event later than July 1, 1958.

7. That with respect to the other sources of municipal pollution in Nebraska, the Nebraska State Health Department should undertake a vigorous campaign to secure the installation of adequate treatment facilities and report thereon periodically to the other conferees. The first of such reports is to be made on July 1, 1957, and thereafter at intervals of not more than six months until adequate remedial measures have been taken.

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EXHIBIT FC-1

General Statement of Interstate Pollution
in the Big Blue River
May 3, 1957

By Glen J. Hopkins, Regional Engineer,
U. S. Public Health Service, Region VI

The interstate pollution on the Big Blue River was identified in the cooperative State-Federal report (Kansas River Basin Pollution Investigation) as early as June, 1949 with respect to the Water Pollution Control Act. This report was prepared by the Public Health Service at the request of and in cooperation with the Bureau of Reclamation, the Corps of Engineers, the Kansas State Board of Health, and the Nebraska State Department of Health. The Big Blue River Basin is one of five tributary basins included in this report.

The Public Health Service prepared an "Evaluation of Interstate Pollution - Blue River Sub-basin" November 6, 1952, which was reviewed and approved by the Division of Sanitation of the Nebraska Department of Health. This report lists sources and nature of wastes of interstate pollution for the Big Blue River; these are (1) effluent from secondary treatment plant serving an estimated population of 2,000 persons at the State Home (Beatrice, Nebraska), (2) sewage and industrial wastes having estimated population equivalents of 16,000 from Beatrice, Nebraska, and (3) effluent from a secondary treatment plant serving an estimated 2,700 persons at Wymore, Nebraska. At that time, the State Home and Wymore were considered to have no treatment facilities needs, but that Beatrice needed to construct a treatment plant.

In February, 1953 the Public Health Service published "A Report of Water Pollution in the Kansas River Basin" (WP Series #38), which was prepared

cooperatively by the Colorado Department of Public Health, Kansas State Board of Health, Nebraska Department of Health, and the Public Health Service. On page 50, the report states with respect to wastes from Beatrice, "Sewage and industrial wastes totaling a population equivalent of 16,000 are connected to municipal sewers. This discharge of organic material into the Blue River during periods of low flow causes localized nuisance conditions and impairs the stream for stock watering, fishing, and recreational purposes." This report recorded the change in status of the pollution problems in the basin, and made additional recommendations regarding the degree of treatment necessary for the wastes from the communities in the basin. This report recommended secondary treatment for the wastes from Beatrice, Nebraska. The interstate nature of the pollution problem in the reach of the stream below Beatrice was duly recognized.

The upstream communities such as Stromsburg, Ulysses, Seward, Milford, and Wilber discharge raw sewage to the stream. Other communities such as Hastings, Fairmount, Friend, and Crete discharge inadequately treated sewage into the stream. Residual pollution from these sources undoubtedly contribute to interstate pollution of the Blue River.

The Public Health Service, in cooperation with the ten States in the Missouri Drainage Basin, published "A Comprehensive Program for Control of Water Pollution - Missouri Drainage Basin" July, 1953. Again this report recorded that Beatrice, Nebraska needed to provide secondary treatment facilities. This report specifically pointed out the interstate nature of the pollution problem below Beatrice.

In February 19, 1954 the Executive Secretary of the Kansas State Board of

Health made a complaint in writing (a copy attached) to the Acting Director of the Nebraska State Department of Health concerning the effect of interstate pollution in the Big Blue River on the Marysville, Kansas water supply.

On June 25, 1954 at a meeting in Superior, Nebraska called by the Nebraska Department of Health and attended by representatives from communities located along the Little Blue and Republican Rivers. Mr. Dwight F. Metzler, Director and Chief Engineer, Division of Sanitation, Kansas State Board of Health, stated that reports of studies made several years ago and approved by the States concerned indicated that interstate pollution did in fact exist in the Little Blue, Big Blue, and Republican Rivers.

The Nebraska State Department of Health submitted information to the Public Health Service concerning waste treatment facilities in the State for inclusion in "Inventory of Municipal and Industrial Waste Facilities in Nebraska" - July 1, 1956. This report indicated (1) that the State Home at Beatrice operates an adequate secondary treatment plant, (2) Wymore operates an adequate secondary treatment plant, and (3) Beatrice provides no treatment of its wastes. No facilities have been built since that time, as evidenced by a letter dated March 12, 1957 from the Nebraska State Department of Health, transmitting an application for a Federal Grant for sewage treatment works for the City of Beatrice.

The U. S. Geological Survey Reports indicate that the annual flow in the Big Blue River has not increased in recent years and in fact appears to have decreased. The increase in population at Beatrice indicates that the pollution load has increased since the last field studies. These facts support the conclusion that the quality of the water in the Big Blue River has further deteriorated since the 1949 study.

Tuttle Creek Reservoir, now under construction will provide attractive recreational facilities. This recreational use will make more necessary the safeguarding of water quality in the Blue River.

It is our opinion that the above reported information clearly indicates that interstate pollution exists in the Big Blue River and that Beatrice is the primary source of this pollution.

Interstate Pollution Abatement Conference

Beatrice, Nebraska - May 3, 1957

Effects of Interstate Pollution of the Big Blue River
On Present and Potential Water Uses

The State of Kansas is concerned about the pollution of the Blue River by cities and industries in Nebraska as it affects several beneficial water uses. Our chief concern is the protection of the Blue River as a source of municipal water supply for the city of Marysville, Kansas. The average coliform index at the Marysville water works intake for the period 1922-24 was 3376 per 100 ml. In the five-year period 1947-52, this had increased to an average of 21,000. According to standards adopted by the State of Kansas, the U. S. Public Health Service and most of the state health agencies, the raw water coliform density should not exceed 20,000 per 100 ml. when a modern, complete water treatment plant is provided. The average coliform density at the Marysville water works intake has exceeded this upper limit during recent years. Perhaps of even more significance is the fact that the maximum coliform values at Marysville have very frequently greatly exceeded the average of 21,000. Frequently the coliform density per 100 ml. will exceed 240,000, or more than 10 times the upper safe limit. The monthly/routine raw water analysis indicating 240,000 coliforms per 100 ml. was in July 1955. Several samples each year for the past several years have shown coliform counts of more than 100,000 per 100 ml.

Under the proper stream flow conditions it is not necessary to use laboratory data in order to demonstrate pollution of the Blue River above Marysville. Under these conditions the water entering the purification plant is



Corrosive, difficult to treat, and contains floating grease and solids. The Marysville water treatment plant operators have on several occasions requested assistance of the State Board of Health in improving upstream water quality.

It is our opinion, based on the Kansas River Basin water pollution investigation and other reports, that while the major portion of the bacterial contamination of the Blue River above Marysville is due to the discharge of raw sewage from Beatrice, Nebraska, pollution of the river above Beatrice is a contributing factor. The available data indicate that the river is seriously polluted above Beatrice and this pollution reduces the capacity of the stream to assimilate, through natural purification, the untreated wastes discharged at Beatrice.

The Blue River is a tributary of the Kansas River which is used extensively for municipal and industrial water supply. There is every indication that water usage for domestic water supply, industrial water supply and irrigation in this area will be increased markedly during the next 5 to 10 years.

Stock watering and fishing are important beneficial water uses in Kansas which are damaged by pollution in the Blue River. The use of water to be stored by the Tuttle Creek dam is important to the consideration of pollution in the Blue River in the vicinity of the Kansas-Nebraska state line. The exact location of the upper end of this pool has not been determined as yet but it appears that backwater will approach within 25 to 30 stream miles from the state line. The sedimentation pool behind this dam will consist of 185,000 acre feet but at the present time serious consideration is being given to storing 400,000 acre feet. This additional storage can be provided by simply changing the operational procedure. It is contemplated



that this water will be used for irrigation, recreation and to supplement low downstream flows.

At the present time there are no well-developed fishing and picnicking areas in the Blue valley in the vicinity of Marysville. This makes it important to protect all available resources in this respect for use by the local citizens.

The people of Kansas have demonstrated their desire to clean up the streams of the State. Every community in the Kansas portion of the Blue River basin, which has a sewer system, has a sewage treatment plant. Sewage treatment facilities are currently under construction at Waterville. Marysville, Hanover, and Frankfort completed treatment plants in 1956, Blue Rapids in 1955, and Washington, Greenleaf and Astell have adequate sewage treatment facilities which were constructed prior to 1950. For the state as a whole, 28 sewage treatment plant projects are under construction at the present time, and 9 more plants will be under contract within the next 60 days. Thirty-six treatment plants were completed in 1956 and an average of 25 projects have been completed each year for the past five years.

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STREAM POLLUTION ABATEMENT
of
Beatrice, Nebraska

T. A. Filipi, Director, Division of Sanitation
State Department of Health
Lincoln, Nebraska

The municipal officials and the citizens of Beatrice, Nebraska have been cognizant of the need of treatment of sewage for several years. On many occasions this need was pointed out while addressing municipal officials, municipal boards, civic and service organizations, and church groups. Therefore, the need for treating of sewage has been stressed and in my opinion accepted by the citizens of Beatrice.

The above statements are in line with the general policy of the State Department of Health. It has been departmental policy that no sewage, without treatment, should be discharged. This policy is being well accepted because in no case do we ever hear that treatment is not necessary. It is only a matter of determining when work should start.

The need for some immediate action has been shown by the studies, conclusions, and requests indicated in the following documents:

- (1) Kansas River Basin Water Pollution Investigation - Federal Security Agency, 1949.
- (2) A Report of Water Pollution in the Kansas River Drainage Basin, Water Pollution Series No. 36, 1953. Federal Security Agency, Public Health Service.
- (3) Letter from Dr. Thomas R. Hood, Executive Secretary, Kansas State Board of Health, Topeka, Kansas addressed to Dr. E. A. Rogers, Nebraska State Department of Health, February 19, 1954.
- (4) Letter from Carl E. Schwob, Federal Security Agency, Public Health Service, addressed to Dr. E. A. Rogers, Nebraska State Department of Health, February 26, 1954.

On March 4, 1954, a letter was sent to the municipal officials of Beatrice informing them of action necessary to abate existing and future pollution. This notice was also sent to all municipal officials of communities discharging sewage into the Big Blue River.

A meeting was held with the City Officials of Beatrice on March 10, 1954, at which time the problem was briefly outlined and a suggestion of a meeting with all City Officials representing towns along the Blue River be held.

A conference of municipal representatives representing communities on the Big Blue River was held in Seward on April 7, 1954 at which time the entire subject was discussed. It was mutually agreed that each community would present in writing to the State Health Department not later than October 1, 1954 a statement of a working program for abatement of pollution for their community. An official notification of this action was sent out April 8, 1954.

To better acquaint the citizens of Beatrice of the overall program, a "Town Meeting" was held in the City Auditorium on June 24, 1954. This group was addressed by Mr. D. F. Mettler, Kansas State Board of Health, and Mr. T. A. Filipi of the Nebraska State Department of Health. The meeting was definitely friendly, and did not indicate any opposition toward a well planned program of sewage treatment.

Beatrice retained the engineering firm of Hemmingson, Durham and Richardson, Omaha, Nebraska for the preparation of a program plan. A preliminary report from this firm was received by the Department September 30, 1954. A final engineering report was received November 5, 1954. This comprehensive report covered all details of study, preliminary design, estimate of costs and financing.

An ordinance relative to a sewer service charge was adopted by the City Council February 25, 1957. A petition was later circulated asking that the issue be placed on the ballot at the next election and that the ordinance be revoked. The ordinance was upheld and retained by a large majority on April 2, 1957.

Based upon the engineers report, a sound program of financing and the desire to go ahead with construction, a request for necessary papers to apply for a federal construction grant was received by this Department on February 19, 1957. This application was executed and received for final processing on March 9, 1957.

This application states that plans and specifications will be ready for advertising for bids 290 calendar days after the grant award, with contract let 40 days later, with completion of project 240 days later.

At the present time, a program for water pollution abatement has not been set up by the State Health Department, the present Water Pollution Control Agency. The Department is now awaiting legislative and budget committee conclusions before any program may be set up. If a program is set up, present knowledge of the overall needs for treatment indicate that Beatrice is worthy of a high priority for a federal grant and will so be recommended to the official water pollution control agency.

In observing the working of the Beatrice City Council, and the Board of Public Works, it is my opinion that the program made is satisfactory. This was realized without undue pressure from regulating agencies. Now if some co-operation from State and Federal Water Pollution Control agencies can be extended by means of a construction grant, the project will be under way as soon as details are worked out.

Attachments-3 Letters

References:

Kansas River Basin Water Pollution Investigation-
Federal Security Agency-Public Health Service-June 1949

Kansas River Drainage Basin-Water Pollution Series No. 30-
Federal Security Agency-Public Health Service-February, 1953.

Progress Report Sanitary Sewers and Sewage Treatment Investigation
Beatrice, Nebraska-1954-Menningson, Durham & Richardson, Inc.

Report-Sanitary Sewers and Sewage Treatment-City of Beatrice,
Nebraska-1954-Menningson, Durham & Richardson, Inc.

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Department of Health
F. A. Rogers, M.D., M.P.H.
Director

STATE OF NEBRASKA
DEPARTMENT OF HEALTH

Victor E. Anderson, Governor
Lincoln 9

March 4, 1954

Mr. G. R. Miller	Manager, Board of Public Works	Beatrice, Nebr.
Mr. Irvin Beck	Mayor	Wilber, Nebr.
Mr. Vester L. TeSalle	Ch., Village Board of Trustees	Milford, Nebr.
Mr. Geo. D. Thomas	Mayor	Seward, Nebr.
Mr. H. K. Parks	Ch., Village Board of Trustees	Wyness, Nebr.
Mr. Edwin L. Anderson	Mayor	Stromsburg, Nebr.

Dear Sirs:

A letter received from Doctor T. B. Hood, Executive Secretary, Kansas State Board of Health, Topeka, a copy of which is enclosed brings to our attention the fact that the Big Blue River entering the State of Kansas is contaminated beyond the tolerable limits that Kansas has set up for their streams. Of special concern to the Kansas State Board of Health is the situation that is occurring at Marysville, Kansas, where water from the Blue River must be treated to make it acceptable for drinking purposes. The attached letter I believe is self explanatory, and describes the situation that now exists.

In order that an overall program of stream pollution abatement on the Blue River be carried out we are asking for the opportunity of meeting with you as head of your local governing body or if you so see fit, with your entire governing body at a time that is mutually convenient to permit us to explain the situation that now exists and to outline the program that we suggest be followed to indicate to the Kansas State Board of Health that something is being done in our State. Would you therefore please inform us at once if a meeting of this type is possible and if so at what date.

Yours very truly,

T. A. Filipi, Director
Division of Sanitation

TAF:tm

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DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
Washington 25, D. C.

February 26, 1954

Dr. E. A. Rogers
Acting Director of Health
State Department of Health
Lincoln 9, Nebraska

Dear Dr. Rogers:

Under the Water Pollution Control Act (P.L. 845, 80th Congress, as amended), the Surgeon General of the Public Health Service is responsible for working cooperatively with States in order to seek solutions to problems of interstate pollution. When such pollution endangers the health or welfare of persons in a State other than that in which the discharge originates, he has, in addition, certain enforcement responsibilities.

During the past several years your Department and our Missouri Drainage Basin Office have cooperated in field investigations leading to the development of a report outlining the water pollution problems confronting your State and those of other States in the Kansas River Basin. In addition, this report provided general information on interstate pollution problems.

Our Missouri Drainage Basin Office has prepared, in cooperation with members of your staff, more detailed statements (copies attached) on interstate pollution problems in the Republican River Basin and the Blue River Basin having their origin in your State. We are again bringing to your attention these matters since pollution created by cities and industries in your State is considered to adversely affect health or welfare of people in Kansas. Copies of this letter and the attachments are being forwarded to the State water pollution control agency of Kansas for their information.

While we recognize that the pollution problems noted in the attachments are only a part of the over-all pollution problems confronting your State, we trust that reasonable efforts will be made to seek a solution to these interstate pollution problems along with the intrastate problems on which you are working. In order that we may keep abreast of the progress being made in the abatement of interstate pollution, please advise us as to the status of the problem in your State noted in the attachments.

The Public Health Service, recognizing its responsibility, will help to the extent of available resources in seeking solutions to problems of interstate pollution. We will be happy to have our basin engineer, Mr. Glen J. Hopkins, discuss this with you at your convenience.

Sincerely yours,

/s/ Carl E. Schwob

Carl E. Schwob
Sanitary Engineer Director
Chief, Division of Water
Pollution Control

Attachments

Statement on Interstate Pollution - Republican River Basin
Statement on Interstate Pollution - Blue River Basin

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OFFICE OF
THE KANSAS STATE BOARD OF HEALTH
TOPEKA

Thomas R. Hood, M.D., M.P.H.
Executive Secretary

19 February 1954

E. A. Rogers, M.D., M.P.H.
Acting Director
Division of Health
Lincoln 9, Nebraska

Dear Doctor Rogers:

We are becoming increasingly concerned about the pollution of the Blue River by cities and industries in Nebraska. Our chief concern comes from the steady increase in coliform pollution which we have noted at the Marysville, Kansas waterworks intake. The average coliform index at this intake for the period 1922-24 was 3,856 per 100 ml. In the five-year period 1947-52 this had increased to an average of 21,000 and an average of the maximum values occurring each of these years is in excess of 135,000 coliforms per 100 ml.

In the past few months it has not been necessary to use laboratory data in order to demonstrate pollution of the river above Marysville. Water entering the purification plant has been odorous, difficult to treat, and according to the operators has contained floating grease and solids. The plant operators noted that this condition became worse some time ago and so reported to us. Upon inquiry Mr. Filipi advised us that Wymore had discontinued use of its sewage treatment works until some of the larger towns in the valley provided treatment for their wastes.

Marysville is voting bonds for a sewage treatment plant on March 2. Twenty-four other cities in the Kansas River Basin in Kansas have already completed new sewage treatment plants since the Board's clean streams policy was adopted in April 1950. Twenty more cities have plants under construction or the plans for letting a contract well advanced.

We hesitated to complain about pollution entering Kansas from Nebraska until the problem in Kansas was well along the way to completion. The fact that this point has now been reached, coupled with evidences of gross pollution at Marysville, prompts us to urge early action in this matter.

Very truly yours,

/s/ Thomas R. Hood

Thomas R. Hood, M.D., M.P.H.
Executive Secretary

cc: T. A. Filipi
Glen J. Hopkins